This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A multiple channel transmission system, comprising:

a first plug in module having

an edge surface and having disposed on a major surface thereof, spaced away from said edge surface, a transmitter section including an array of transmitter modules each having therein a two-dimensional array of lasers sharing a common substrate that are individually operative to convert a respective electrical signal into a corresponding optical signal;

a first plurality of bundles of optical waveguides dimensioned and arranged to transmit the optical signals, a first end of a first of said first plurality of bundles being optically coupled to a first group of said transmitter modules and a first end of a second of said first plurality of bundles being optically coupled to a second group of said transmitter modules, said first plurality of bundles being stacked in planes substantially parallel to said major surface to form a two dimensional array at a location proximate each first end; and

a first plurality of multi-channel optical connectors disposed at spaced locations along said edge, a first optical connector being optically coupled to a second end of the first of said bundles and a second optical connector being optically coupled to a second end of the second of said bundles;

a second plug in module having

a second edge surface and having disposed on a major surface thereof, spaced away from said second edge surface, a receiver section including an array of receiver modules each operative to convert a respective optical signal into a corresponding electrical signal;

a second plurality of bundles of optical waveguides dimensioned and arranged to receive optical signals to be converted, a first end of a first of said second plurality of bundles

being optically coupled to a first group of said receiver modules and a first end of a second of said second plurality of bundles being optically coupled to a second group of said receiver modules, said second plurality of bundles being stacked in planes substantially parallel to the major surface of the second plug in module to form a two dimensional array at a location proximate each second plug-in module first end; and

a second plurality of multi-channel optical connectors disposed at spaced locations along said second edge, a first optical connector of the second plurality of optical connectors being optically coupled to a bundle of said second plurality of bundles and a second optical connector being optically coupled to another bundle of said second plurality of bundles.

2. (Original) The transmission system of claim 1, wherein the transmitter modules are arranged in an NXM two dimensional array, and wherein said first plurality of fiber bundles comprises N fibers arranged in M bundles.

3. (Original) The transmission system of claim 1, wherein the receiver modules are arranged in an N X M two dimensional array, and wherein said second plurality of fiber bundles comprises N fibers arranged in M bundles.

4. (Original) The transmission system of claim 1, wherein said first plug in module further includes a first plug-in module receiver section including an array of receiver modules each operative to convert a respective optical signal into a corresponding electrical signal;

a third plurality of bundles of optical waveguides dimensioned and arranged to receive optical signals to be converted from a remote plug-in module, a first end of a first of said third plurality of bundles being optically coupled to a first group of said first plug-in module receiver

modules and a first end of a second of said third plurality of bundles being optically coupled to a second group of said first plug-in module receiver modules, said third plurality of bundles being stacked in planes substantially parallel to the major surface of the first plug in module to form a two dimensional array; and

a third plurality of multi-channel optical connectors disposed at spaced locations along the edge of the first plug in module, a first optical connector of the third plurality of optical connectors being optically coupled to a bundle of said third plurality of bundles and a second optical connector of the third plurality being optically coupled to another bundle of said third plurality of bundles.

5. (Original) The transmission system of claim 1, wherein the plurality of transmitter modules are fixed in one body.

6. (Original) The transmission system of claim 5, wherein the plurality of transmitter modules are arranged in a two-dimensional N X M stack.

7. (Original) The transmission of claim 1, wherein the plurality of receiver modules are fixed in one body.

8. (Original) The transmission system of claim 7, wherein the plurality of receiver modules are arranged in a two dimensional N X M stack.

9. (Original) The transmission system of claim 4, wherein at least one group of the third plurality of receiver modules and at least one group of the first plurality of transmitter modules are fixed in one body.

10. (Original) The transmission system of claim 1, further including optical fiber links for interconnecting at least some of said first plurality of optical connectors to at least some of said second plurality of connectors.

11. (Currently Amended) A plug-in module for use in a communication system, comprising:

a transmitter section including an array of transmitter modules each having a two-dimensional array of lasers sharing a common substrate therein, each of the lasers being operative to convert a respective electrical signal into a corresponding optical signal, said transmitter modules being disposed on a major surface of said plug in module and being spaced from a peripheral edge thereof;

a plurality of bundles of optical waveguides dimensioned and arranged to transmit the optical signals, a first end of a first bundle being optically coupled to a first group of said transmitter modules and a first end of a second bundle being optically coupled to a second group of said transmitter modules, said bundles being arranged in a stacked two dimensional array in planes substantially parallel to said major surface; and

a plurality of optical connectors disposed at spaced locations along said peripheral edge, a first optical connector being optically coupled to a second end of the first of said bundles and a second optical connector being optically coupled to a second end of the second of said bundles,

whereby said bundles diverge from a stacked arrangement proximate the transmitter section in a direction toward said peripheral edge.

12. (Original) The transmission system of claim 11, wherein the transmitter modules are arranged in an N x M two dimensional array, and wherein the fiber bundles comprises N fibers arranged in M bundles proximate the transmitter section.

13. (Currently Amended) A plug-in module for use in a communication system, comprising:

a receiver section including an array of receiver modules each having a two dimensional array of photodetectors sharing a common substrate and individually operative to convert a respective optical signal into a corresponding electrical signal, said receiver modules being disposed on a major surface of said plug in module and being spaced from a peripheral edge thereof;

a plurality of bundles of optical waveguides dimensioned and arranged to receive the optical signals, a first end of a first bundle being optically coupled to a first group of said receiver modules and a first end of a second bundle being optically coupled to a second group of said receiver modules, said bundles being arranged in a stacked two dimensional array in planes substantially parallel to said major surface; and

a plurality of optical connectors disposed at spaced locations along said peripheral edge, a first optical connector being optically coupled to a second end of the first of said bundles and a second optical connector being optically coupled to a second end of the second of said bundles, whereby said bundles diverge from a stacked arrangement proximate the receiver section in a direction toward said peripheral edge.

14. (Original) The transmission system of claim 11, wherein the transmitter modules are arranged in an NXM two dimensional array, and wherein the fiber bundles comprises N fibers arranged in M bundles proximate the transmitter section.

15. (New) A plug-in module for use in a communication system, comprising:

a transceiver section comprising a two dimensional array of transmitters and receivers, said two dimensional array comprising at least one row of transmitters and at least one row of receivers, said transmitters being operative to convert received electrical signals into corresponding optical signals for transmission, and said receivers being operative to convert received optical signals into corresponding electrical signals, said two dimensional array being disposed on a major surface of said plug in module and being spaced from a peripheral edge thereof;

a plurality of bundles of optical waveguides dimensioned and arranged to pass the optical signals, a first end of a first bundle being optically coupled to a group of said transmitters and a first end of a second bundle being optically coupled to a group of said receivers, said bundles being arranged in a stacked two dimensional array in planes substantially parallel to said major surface; and

a plurality of optical connectors disposed at spaced locations along said peripheral edge, a first optical connector being optically coupled to a second end of the first of said bundles and a second optical connector being optically coupled to a second end of the second of said bundles, whereby said bundles diverge from a stacked arrangement in a direction toward said peripheral edge.